



Bibliotekets rødder i det fremvoksende industrisamfund

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DTU Library

Technical Information Center of Denmark

75 years

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Kgs. Lyngby 2017

Editors

Thomas Skov Jensen, Anette Schneider and Annette Refn
November 2017

DTU Library

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Contents

Preface	5
Technology transformed the library: "Today there is not much we cannot find"	6
DTU Library has become an oasis in the everyday lives of the students	8
"Borrower" has become an obsolete word at DTU Library	10
In 25 years, "library" will still be spelt with capital letters at DTU	12
The library's history is rooted in the industrial age	14
DTU Library - highlights	16

Preface

DTU Library marks its 75th jubilee with an exhibition, a film, an event on 23 November 2017 and this jubilee publication. In future, the majority of the materials will be found on the library's homepage: www.bibliotek.dtu.dk

With previous jubilees, we published handsome, printed jubilee books. On this occasion, we have chosen to issue an electronic jubilee publication. It seems appropriate to the general digital transformation which marks the past 25 years of DTU Library's history.

This jubilee publication is briefer and lighter in style than its printed predecessors. Focus is on where DTU Library stands today and in which direction we are moving. This with due regard to the history, which is included as one of the themes of this publication. The other themes are probes into central issues over the past 25 years, written by freelance journalist Rasmus Højmark Ravn based on interviews with key persons associated with DTU Library.

The story about DTU Library begins with a library whose roots go back to the establishment of The Polytechnic College, now DTU, in 1829. In 1942, a fusion took place between Technical Library and the library of the Industrial Association. At the inauguration of this new library in 1942, there were significant restrictions for students, who were not even allowed to read their own books in the library's reading room.

Today, in 2017, the reality fortunately looks quite different. Today, students are encouraged to bring their own books, use their own computer, work in groups, chat to each other, eat and drink as they wish etc. Present times differ from the past as the library is no longer adorned with signs prohibiting this and that and the furniture is

comfortable and creates an atmosphere of relaxation and "hygge"

Today, the library is called a "Smart library" because DTU's researchers as well as students are able to take advantage of the technological possibilities. This is in keeping with the digital development in the 1990s, which was exactly as revolutionary as the smart library is today. Thus, DTU Library can proudly claim to be the path to knowledge and innovation.

The technological development has also brought about a change of paradigm in the relation between libraries on the one hand and researchers and students on the other. A shift from a former "awe" to a present "straightforwardness". A modern library search system means that the student and the researcher can find literature by themselves and they use the librarian for more specific and complicated problems.

In future, DTU Library will be moving further and further into the core of teaching and research at DTU. The library involves itself in new forms of education, such as co-creation, and makes a serious effort in the Open Science area. Open Access and research data management require new and different efforts, which DTU Library has already begun to tackle.

The future is already knocking on our doors, and DTU Library will continue to be a leading user-focused and innovative library which supports DTU's research, education and cooperation. Throughout its history, DTU Library has proved to be ready to grasp changes and meet challenges; and we will continue to do so over the coming 25 years.

Congratulations to DTU Library – and keep reading.

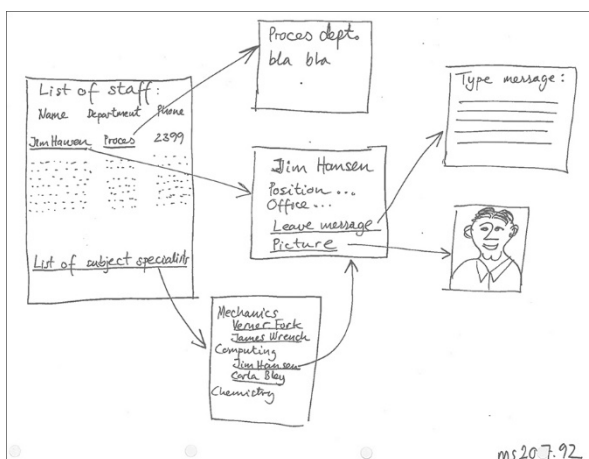
Gitte Bruun Jensen
Head of Library

Technology transformed the library: “Today there is not much we cannot find”

With online systems such as DTU Findit and DTU Orbit, users of DTU Library have gained easy access to a multitude of information. Progress has been fast since the launch of Denmark’s first homepage.

At the end of 1992, Mogens Sandfær and two computer programmers relocated from CERN to DTU Library. An incredibly important chapter in the history of the library had begun. The World Wide Web had taken root at the Swiss research centre and in Denmark, one had noticed the team’s work in integrating library databases with the WWW.

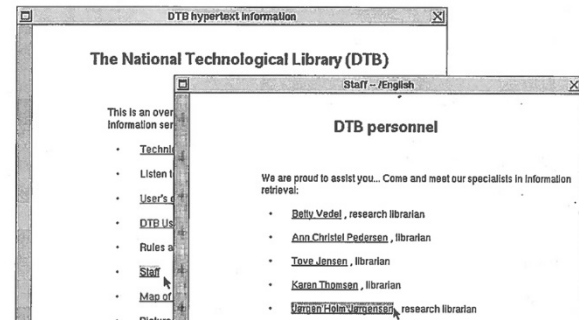
A large part of the relevant open source software had already been developed at CERN, but it was at DTU Library that these efforts first saw the light of day. At the library’s 50th anniversary, Mogens Sandfær and his team could launch Denmark’s first homepage and the world first library on the WWW.



Information Architecture, 1992

“It was a revolution. The Library had already advanced systems servicing researchers and

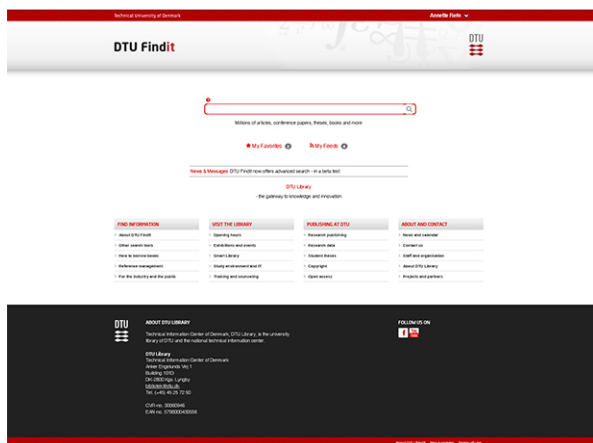
industry, but now it was possible to do so much more than just ordering a photocopy and having it delivered by mail. One could now click on a description of the article and get access to it. Some of the fundamental ideas of the traditional library were being challenged” says Mogens Sandfær, the then director of development at the library.



Website of DTB, 1992

After two decades with technical developments and a few name changes this system is known as DTU Findit. Back then it seemed to rock the foundations of the library, but now it is an integrated part of that foundation. An indispensable tool for DTU’s researchers and students when they need information for their reports, teaching and research projects. They have easy access to hundreds of thousands of book titles and millions of journal articles, which they can access directly from their computer and other devices.

“There is not much we cannot provide access to today – even a doctoral thesis from some exotic place. In the old days, we could have over 200 manual reservations on any one day where we had to verify if we had the materials ourselves or had to borrow them from elsewhere. Today, this whole process is automated so we never see the requests. We can send a request and within minutes, we have the document. Over the last few years, we have seen big developments” says systems librarian Tove Nielsen.



The search interface DTU Findit, findit.dtu.dk

Free access to research

Tove has been part of the development of DTU Findit since the mid-1990s. At that time, only CERN had a comparable library service. Mogens Sandfær and his team had been instrumental in the early development of the electronic library. They scanned CERN's articles and pre-prints and made these available via a search system which had access to the internet. This was one of the stepping stones towards "Open Access", free and unhindered access to research publications.

The concept of Open Access has become increasingly important since then. With the advance of the internet and systems such as DTU Findit, research results are available as never before. On top of this, we can add DTU Orbit, where the library registers all the publications of DTU's researchers – Open Access when this is possible. However, the publishers still have the commercial rights to many of the publications. Today, DTU purchases licenses to millions of scientific publications which can easily be downloaded from the publishers' websites. In Denmark, as elsewhere, the goal is to make more research freely available in line with the dogmas of the 1990s.

"The internet and the WWW became the simple technology and the grand vision that could connect everyone and everything. It was brought forward by a new form of shared economy and a belief in openness. It was all about helping each other and helping the planet. The more we shared, the richer we became", Mogens Sandfær says.

*By Rasmus Højmark Ravn
Freelance journalist*

DTU Library has become an oasis in the everyday lives of the students

Once the library was dominated by silence and shelf after shelf with books and journals. Today, things are different. Today, the library has developed into a modern study and learning environment, which the students neither can nor want to do without.



The National Technological Library, DTB, in the 1970s

At around noon, things start to get busy. An almost endless queue of students passing through the doors, many of them with food and drink in their hands. The many tables and colourful work stations are quickly occupied and the queue around the coffee bar in the corner is growing. On the large stage in the middle of the library, a group of students have gathered around the huge plasma screen. In front of them sits a man wearing a pair of reality glasses and with a PlayStation controller in his hands. With careful movements, he directs a figure across the screen, while moving his head in all directions to ensure he gets the whole digital experience.

“DTU Library” it says written in white across the entrance to the library building but it is in the bookshop that the books are fighting for space. In the library, other objects take center stage. A veteran KZII airplane elegantly suspended from the second floor hangs poised over the stage and up here, there are

not many available computer stations left on either side of the central staircase. Three students have gathered around a table with their own computers. Environmental engineering is on the agenda, but the conversation soon changes to topics of American football, David Bowie and plans for the weekend.

Around the library, there is a mixture of informal conversation, academic discussions and lots of laughter. If you want peace and quiet, you can do two things: Borrow earphones with white noise from the service desk or retreat to the section on the second floor where clear glass walls shield one from noise from the rest of the library. Next to the hammocks in the corner, the “Shh” sign indicates that this is the only designated quite area in the library.

These days, it is a long time since absolute silence and endless rows of books dominated the library building itself. The library has morphed into a modern study and learning environment, but the building itself is still the heart and soul of the library. It is still a place where the students can meet each other, do things together or just relax. An oasis in an often very busy working day.



Data bar 101 in the library, 2010

“The library is a place to be proud of. It is great that we are open 24/7 without the place being overrun by parties and so forth. The students take their shoes off and they don’t drink beer in the library – they respect the building. One of my friends teaches chemistry at the University of Copenhagen and was once hired for private tutoring here at DTU. At

one point, he wants a smoke, starts to pack his things together and says "See you in 15 minutes". We told him that it was quite OK for him to leave his things here, the library is a safe place because the students see themselves are one large group" says librarian Kasper Bøgh.

A smart and active library

The Library offers, among other things, study group rooms, a data bar and a multi-media workshop, as well as lots of possibilities for relaxation, exhibitions and events.

Library porter Torben Gregersen remembers a time when library space was reserved for other activities. The library was filled with books and journals from floor to ceiling. The librarians were on duty and prepared to help from behind the obligatory library desk. As the collection has become more digital from the 1990s and on, the printed collection has grown smaller and moved to the library's basement. The librarians are also less visible than they used to be, but are still ready to help. Torben Gregersen believes that the extra room for the many new facilities makes the library a more exciting place to be.

"It's fun to see the new students being shown round and being told "yes here is the library and as you can see, there are no books". And it's fun to present them with numerous

possibilities they didn't know existed in the library. They can borrow cameras, projectors, PlayStation etc" says Torben.

At the same time, the library has become more of, what is called, a smart library with sensors to harvest data about lighting, indoor climate and so forth. A digital sand box for students, teachers and researchers that need to use information for their projects or just want to experiment. The goal is to make the library as interactive and dynamic as possible, says director Jakob Fritz Hansen.



The event area from 2013

"The library provides space for students and not books. The library is not only a service function but a learning environment that we facilitate rather than create," says Jakob.

*By Rasmus Højmark Ravn
Freelance journalist*

“Borrower” has become an obsolete word at DTU Library

Today, DTU Library is being used in many more ways than previously when it was predominantly a place for borrowing books. That is why visitors are no longer called borrowers but users. They have become more resourceful and have gained more influence on the library’s development.



Borrowing in the 1970s

I first met you four years ago and have been enchanted ever since. You are a vital part of my life during the tough exam periods, and when I have to write important papers and am in need of your support. Your considerable knowledge and variety fills me with warmth, and we understand each other.

These flattering words come from a “love letter”. An unusual love letter. It is not written to a person of the same or the opposite sex, but to a library. One letter among many which DTU Library has asked its users to write. In order to find out what they think about the library – for better or for worse.

User focus has become all-important in the library. Once it was primarily a place people visited to seek help to find the books and periodicals they wanted, and the librarians were always there to help. As time went on, the material was digitized, and the visitors

suddenly had access to huge amounts of information. The classic loans dwindled, and “borrower” became an obsolete word in the library. Today, they are called “users”.

“They have become consumers of information. Previously, they asked us about a lot of things, now they just punch in the search words and find what they want. They can do many things on their own, and it is our task to make it as easy as possible for them. Help them to help themselves. Focus is directed at when the users actually need us, rather than us just waiting in the library,” says librarian Jeannette Ekstrøm.

Curiosity about the users

Researchers, teachers and students can for example get help with copyright, research registration and publishing. They can also book a librarian, if they need to kick-start a project that demands knowledge of the library’s possibilities. Jeannette Ekstrøm’s colleague, Peter Hald, recently helped two girls with an introduction to the search engine DTU Findit whereupon they quickly wanted to continue the search on their own. Classic library tasks are on the decrease, he says. There is more focus on instruction in information searches and on how the systems work. However, it is just as important to be aware of the users’ wishes.



DTU Library, 2017

“It is a question of being open and observant when dealing with the users. We have users from all over the world with different experiences of using a library. We do user surveys of how to design the rooms, for

example quite basic questions of which chairs to buy. We investigate which electronic materials are rarely used and which materials the users have tried to get hold of. What are the shortcomings in terms of what we make accessible." says Peter Hald.



Counselling by the "librarian wall", 2017

Today, the users have far greater influence on what the library buys. Earlier, this was decided according to certain fixed criteria; now it happens in response to the users'

requests. At the same time, the library often tailor-makes its educational programmes. For example, in subject packages, through the use of e-learning based on DTU Findit. The aim is to create something uniquely targeted the individual user. The library makes some things available, and the users tell us what is missing. Co-creation has become the operative word. Whether it happens via formal fora or a love letter:

We have spent time together nearly every day since the start of my second year at DTU. I love your group rooms and study booths despite the fact that they must be booked two weeks in advance. We always see each other 12 hours, seven days a week during our study holiday, and you are the only one, I can concentrate with.

*By Rasmus Højmark Ravn
Freelance journalist*

In 25 years, “library” will still be spelt with capital letters at DTU

DTU rapidly approaches one hundred years, and it is hard to predict what the future will bring. One thing is certain, however, we shall continue to challenge the frames of what defines a well-functioning research library.



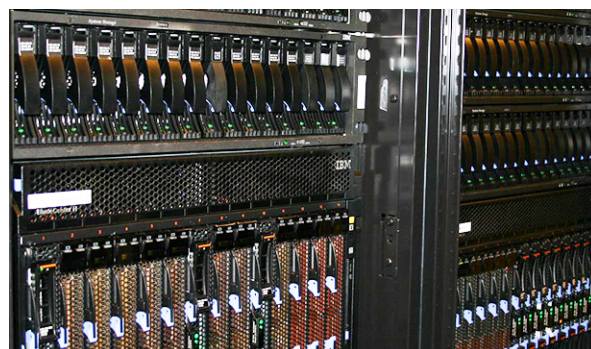
Welcome to the library in Lyngby

The very existence of libraries affords the best evidence that we may yet have hope for the future of man. T. S. Eliot (1888-1965)

Steen Markvorsen believes that libraries will play a decisive role in the future. Therefore, the quote from the late English poet T.S. Eliot is one that he remembers. As a member of DTU Library Forum, he often contemplates what the university's library is going to look like – in the short as well as the long term. Although it is not at all easy, the professor from DTU Compute says one thing with great certainty: Technological developments offer considerable opportunities.

Data, information, knowledge and insight are the four basic elements of DTU Library's work. Both right now and in the future. The prospect of gaining insight will always be a motivation factor across research fields and publishers, but particularly the work with data brings revolutionary change. Increasingly, the physical library is going to be a laboratory where users can collect interesting data. DTU

is investing in a system where the university's researchers can archive their data so that they can be reused, compared and analysed. There are major perspectives for the library in providing a greater cohesive force in the knowledge that emerges from the university's data and research, says Steen Markvorsen.



The servers in the basement of building 101

“Interestingly enough, there is an increasing number of examples of how more or less identical ideas and methods are rediscovered and used independently of each other across subjects and disciplines which are typically very different. Things move so fast that it is difficult to keep the necessary focus on other disciplines and be up to date. It may easily be a noble task for a university library to mediate these important connections despite the fact that keywords and history may be totally different. All things being equal, it helps that we are communicating better with each other and showing the students how they, too, can communicate across different disciplines,” he says.

The professor refers to an article from the magazine "Ingeniøren" with the heading, “The transition from studying to working life is a culture shock”. One of the article's conclusions is that the students underestimate the importance of communication before they enter the labour market. In the opinion of Steen Markvorsen, the library has the means to close the gap between expectation and reality by facilitating more communication and cooperation, also

physically. The need for a big library hall will still exist in the future.

"The strength of the library is the interplay between the digitale and the physical world. Otherwise, it would just be a web shop. The library is a community, and we can expand it so that it includes others apart from the students. We are already doing this with our events. I am optimistic that DTU will still have a library in 25 years as the need for a technical library close to researchers and students is considerable", says director Jakob Fritz Hansen.

"We must be open and challenge the frames"

He also emphasizes the library's "cultural journey towards a future with more freely accessible research". A future where the commercial publishers and journals play a smaller part. Steen Markvorsen is aware of the possibilities in an Open Access system with editors and reviewers, rather like an ordinary publisher. That way the prestige of having your research published in an important journal is still obtainable.

"If publishing in this way was organized by the library instead of the publishers, there would be a local and national anchoring as well as transparency in the publishing process. You could spend some of the large amounts of money which are currently being

spent on licenses from the publishers", he says.

What the future brings is hard to predict. Despite the progress of technology, some things are written in stone: DTU Library's name. No matter how far away one might have to move from what is traditionally the hallmark of a library. Today, we talk about "smart libraries", but the time will come when it is called "library" again, maintains Gitte Bruun Jensen, Head of Library. The same will be the case when the history of the library takes its next step. Whether we are talking robot technology or virtual reality.



VR and 3D on the big screen

"We must continue to be open and challenge what a library can accommodate. That is something we are proud of", she says.

*By Rasmus Højmark Ravn
Freelance journalist*

The library's history is rooted in the industrial age

DTU Library's book collection goes back to the beginning of the 19th century when DTU was established and Denmark was still an agrarian society. This book collection grew concurrently with Denmark's development into an industrial society. Therefore, the collection gives a unique insight into the technical knowledge that lies at the heart of the massive changes that swept over the country during the 19th century. The railway, the telegraph and electricity are examples of inventions and discoveries that changed the everyday lives of the Danes.



The old books. Photo: Emil Engelbrektsen

In 1942, DTU Library came into existence as a merger between two libraries: The Technical Library and the Library of the Industrial Society. The library that emerged was The Technical Library of Denmark, DTB.

Ups and downs for the Technical Library

The history of the library began at the same time as DTU in 1829. Like the university itself, the beginnings of the library were modest. In 1854, the collection – including the collection of a private organization – consisted of some 1.300 titles and a catalogue was published. This catalogue shows that most of the books were in German and a few in French. If you wanted books in Danish or English, you had few choices. The library did contain text books but most of the collection focused on

the technological issues of the day, such as steam engines and railways, as well as other important subjects from mill construction to works by the French socialist Friedrich Engels describing the conditions of the English working class. There were also suggestions for changes in water supplies and works about sewerage. These were important questions for the technicians of the day in the unhealthy and growing cities.

The finances of the library were not exactly exorbitant and in 1862, the book collection was given up so that for many years, there were only departmental libraries. At the beginning of the 20th century, the Technical Library was reborn and gradually expanded with the inclusion of the collections of the library of the Technical Society and the book collection of the Danish Society of Engineers.

A meeting place for the citizens of Copenhagen

The Industrial Society in Copenhagen had greater success with their library and during the 19th century built up a large collection. The society was established in 1838 to promote industry in Denmark. At this point in time, the word industry simply meant production and the confederation was a private society that included craftsmen, businessmen and tradesmen as its members –as well as engineers. Some of its members were not especially interested in advances in science, industry or technology. The Confederation and its reading room was more like a club where its members could sit and chat with friends and read today's papers.

The idea behind the society was to spread knowledge and promote industry through various activities. The Confederation arranged exhibitions and talks, had a reading room and published a journal. The Confederation was also politically active on issues of freedom of trade and technical education, and the initiative for the first railway between Copenhagen and Roskilde came from the society.

In 1910, the Industrial Council was founded as part of the Industrial Society and the society gradually changed from a popular meeting place to a more modern business organization. As part of this process, the library became streamlined with more focus on technical issues and less focus on being a social meeting place.

The new role of the technical library

At DTU (known then as "Polyteknisk Læreanstalt"), the technical library was given a new status in 1926. A committee had proposed that the technical central library, the importance of which has become apparent as the technical sciences advanced, should be The Technical Library. The library's own librarian, Helge Holst, was a member of the committee and had influenced this decision.



The Library at "Polyteknisk Læreanstalt" (presumably from Sølvgade). Photo: Fred. Riise

The model for this set-up was the library of The Royal Veterinary and Agricultural University of Denmark and the aim was to attain the same high standard for The Technical Library. The committee's report also mentioned the library of the Industrial Society, but this institution was in principle only for members. At the same time, the intention was to divide tasks so that The Technical Library should collect scientific information, Danish Technological Institute should focus on more practical literature while

the library of the Industrial Society should focus on business aspects. However, it proved difficult to uphold this division. The result was that the library of the Confederation primarily purchased books on mechanical engineering, electrical engineering, chemical engineering and industrial organization and economy, while the Technical Library focused on building technology and the needs of scientific research.

The technical libraries are merged

Over the years, there had been a pronounced wish to merge the two libraries and in 1942, this became a reality in connection with the opening of a new library building and the establishment of the Technical Library of Denmark with a collection of approx. 100.000 books. In addition to the collection itself, the library housed a reading room, offices, meeting rooms and housed 6 km of books placed in closed stacks. However, there was no room for the students – the Industrial Society specifically stated that the main reading room was not to be used for the purpose of reading one's own books. Instead, a student reading room was established in the administrative building.

Want to know more?

If you want to know more about the early history of the library, please visit

www.historie.dtu/formidling/artikler.

Here you'll find a longer version of this article, as well as references to other articles about DTU Library from before 1942. *Please note that these articles are in Danish only.*

*By Louise Karlskov Skyggebjerg,
History of Technology DTU*

DTU Library - highlights

1942	The National Technological Library (DTB) becomes a reality after a merger between the Library of the Industrial Society of Danish Industry and the Technical Library, the library of "Den Polytekniske Lærestalt", the former DTU.
1957	Library training for students is launched for the first time.
1960	Joint library catalogue for the two former libraries is issued.
1962	The temporary library in Lundtofte opens.
1967	The first plans and experiments with the automation of some library services at DTB are set in motion.
1971	The main library in building 101 in Lundtofte opens.
1979	The library system ALIS is used for online searching.
1983	ALIS is taken into use for circulation and materials are bar-coded.
1989	ALIS 2 is abandoned and a new cooperation with Ex-Libris regarding a new library system is initiated.
1992	DTB launches Denmark's first website.
1995	DT DTB is now called the Technical Information Center of Denmark, DTV.
2007	As part of the university reform in Denmark, the library at Risø is merged with DTV.
2008	The name is changed to DTU Library.
2013	The merger of DTU and the Engineering Academy of Copenhagen results in the two libraries also being merged.
2013	DTU Library launches DTU Findit and the library building undergoes major renovation.
2017	Once again, the library undergoes renovation and opens with better acoustics, new lighting and ventilation - and smart library.

DTU Library

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